

STRUCTURE AND METHOD OF SELF- ALIGNED BIPOLEAR TRANSISTOR HAVING TAPERED COLLECTOR

Abstract

A bipolar transistor is provided which includes a tapered, i.e. frustum-shaped, collector pedestal having an upper substantially planar surface, a lower surface, and a slanted sidewall extending between the upper surface and the lower surface, the upper surface having substantially less area than the lower surface. The bipolar transistor further includes an intrinsic base overlying the upper surface of the collector pedestal, a raised extrinsic base conductively connected to the intrinsic base and an emitter overlying the intrinsic base. In a particular embodiment, the emitter is self-aligned to the collector pedestal, having a centerline which is aligned to the centerline of the collector pedestal.